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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/565,633

06/23/2006

Guido Luigi Daghini

07040.0245-00000

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06/11/2010

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

06/11/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/565,633 | Applicant(s) DAGHINI ET AL. | |
| | Examiner Justin R. Fischer | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-65 and 68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-65 and 68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 1, 2010 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 31-34, 38-45, 49-51, 53-65, and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques (GB 1,091,507, of record) and further in view of Okamoto (US 5,287,691, of record).

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved corrosion

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resistance and fatigue resistance, as shown for example by Okamoto (Column 1, Lines 5-11). It is particularly noted that Okamoto broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Okamoto in the flipper of Pneumatiques. Also, the preformed filaments of Okamoto have a diameter between 0.10 mm and 0.50 mm, which substantially encompasses the claimed range (Column 5, Lines 34-36).

Lastly, regarding independent claim 31, the language "high performance" fails to structurally define the claimed tire construction over that of Pneumatiques.

Regarding claims 32-34, 38, 43-45, and 48, the cord of Miyazaki includes a pair of preformed filaments having a spiral or helical shape (Column 2, Lines 54+).

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct contact with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

Regarding claim 41, as noted above, the tire of Pneumatiques includes a pair of chafers 16 formed of metallic reinforcing elements (Page 2, Lines 62+). Given the disclosure of Okamoto, one of ordinary skill in the art at the time of the invention would

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have been equally motivated to form chafer strips 16 from cords comprising at least one preformed filament. In particular, chafer strips are well recognized as being "bead reinforcing layers".

With respect to claims 50 and 53, Pneumatiques suggests the use of more than one flipper (Page 2, Lines 15-20). In such an instance, one of the flippers can be viewed as the claimed "flipper" and the additional flipper can be viewed as the claimed "chafer". The claims as currently drafted do not exclude the second flipper of Pneumatiques from being viewed as a chafer (claim only requires a layer formed of metallic reinforcing elements).

As to claim 51, chafer strips 16 are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, one of ordinary skill in the art would have recognized the disclosed metal as being steel as is conventional in the tire industry.

Regarding claims 55 and 60, Okamoto teaches the use of brass plated metal filaments, as is conventional in the tire industry (Column 6, Lines 20+).

As to claims 56, 57, 61, and 62, Miyazaki suggests the inclusion of 2 preformed filaments having the claimed preformed and stranding dimensions (Column 6, Lines 20+). Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

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Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally used in tire components, including flippers. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

4. Claims 31-37, 39-48, 50, 51, and 53-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pneumatiques and further in view of Mizuma (JP 11241282, newly cited).

Pneumatiques teaches a pneumatic tire construction including a pair of annular reinforcing elements 10, a carcass structure 13, a pair of bead fillers 11, at least one flipper 12, a tread band, a belt structure (reference character 2 in Figure 1), and a pair of sidewalls, wherein each of said carcass plies 13₁-13₃ are turned up around respective annular reinforcing elements. As to the flipper, Pneumatiques teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). While Pneumatiques fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing high durability, as shown for example by Mizuma (Abstract). It is particularly noted that Mizuma broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of

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tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements (fair reading of reference suggests the general use of such cords in all tire components). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Mizuma in the flipper of Pneumatiques.

Also, Mizuma teaches a plurality of embodiments in which the steel filaments have a diameter of 0.25 mm (Table 1).

Regarding claims 32-37 and 43-48, the cord of Mizuma includes at least two, preformed steel filaments having a "substantially" sinusoidal form (Abstract). The reference further teaches that the preformed filaments have a wave pitch between 2 and 10 mm and an amplitude or wave height between 0.02 and 10 mm (Abstract).

With respect to claims 39 and 40, flipper 12 comprises a pair of legs that are in direct with bead filler 11 and a central portion that directly contact the annular reinforcing elements 10. It is further evident from Figure 2 that flipper ends 12₁ and 12₂ are offset from one another.

Regarding claim 41, as noted above, the tire of Pneumatiques includes a pair of chafers 16 formed of metallic reinforcing elements (Page 2, Lines 62+). Given the disclosure of Mizuma, one of ordinary skill in the art at the time of the invention would have been equally motivated to form chafer strips 16 from cords comprising at least one preformed filament. In particular, chafer strips are well recognized as being "bead reinforcing layers".

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With respect to claims 50 and 53, Pneumatiques suggests the use of more than one flipper (Page 2, Lines 15-20). In such an instance, one of the flippers can be viewed as the claimed "flipper" and the additional flipper can be viewed as the claimed "chafer". The claims as currently drafted do not exclude the second flipper of Pneumatiques from being viewed as a chafer (claim only require a layer formed of metallic reinforcing elements).

As to claim 51, chafer strips 16 are positioned axially external of carcass plies 13₁-13₃.

With respect to claims 54 and 59, Mizuma expressly teaches the use of steel filaments.

Regarding claims 55 and 60, metal filaments are conventionally brass plated in the tire industry and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed coating.

As to claims 56, 57, 61, and 62, Mizuma suggests the inclusion of at least 2 preformed filaments having the claimed preformed and stranding dimensions (Abstract). Additionally, it is noted that the claims define absolute dimensions and it is well recognized that cord constructions vary as a function of the size of the tire (and the intended use)- one of ordinary skill in the art at the time of the invention would have found it obvious to select an amplitude and wavelength in accordance to the claimed invention absent a conclusive showing of unexpected results.

Regarding claims 58 and 63, the claims define an extremely broad range of values for the cord density and said values are consistent with those conventionally

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used in tire components, including flippers. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed cord density.

With respect to claims 64 and 65, flipper 12 and chafer 16 are formed of metallic reinforcing elements inclined between 20 and 45 degrees with respect to the equatorial plane of the tire, which falls entirely within the broad ranges of the claimed invention.

5. Claims 31, 41, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Io (JP 06024216, of record) and further in view of Okamoto. Io is directed to a pneumatic tire construction comprising a chafer 3 and a flipper that is spaced from a carcass structure by said chafer (reference uses same reference character for each bead reinforcing layer). The reference further teaches that each bead reinforcing layer is formed of metallic reinforcing elements (Paragraph 6). While Io fails to expressly suggest a cord having at least one preformed element, such a metallic cord is recognized as providing improved corrosion resistance and fatigue resistance. It is particularly noted that Okamoto broadly teaches the use of such a metallic cord in tire constructions- one of ordinary skill in the art at the time of the invention would have readily appreciated forming a wide variety of tire components, including a conventional tire flipper, with the disclosed steel reinforcing cord as the above noted benefits are highly desirable in all tire components including steel reinforcing elements. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to use the metallic cord of Okamoto in the flipper of Pneumatiques. Lastly, the preformed filaments of Okamoto have a diameter

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between 0.10 mm and 0.50 mm, which substantially encompasses the claimed range (Column 5, Lines 34-36).

Regarding claim 52, chafer 3 is disposed axially internal with respect to the carcass structure.

Response to Arguments

6. Applicant's arguments filed June 1, 2010 have been fully considered but they are not persuasive.

Applicant argues that Pneumatiques fails to teach or suggest at least a "high performance" pneumatic tyre. As detailed above, the language "high performance" fails to structurally define the claimed tire construction over that of Pneumatiques. A fair reading of Pneumatiques suggest the general manufacture of pneumatic radial tire constructions and such would include "high performance" tires.

Applicant further contends that Okamoto specifically relates to belts and/or carcass plies and no mention is made to beads and/or bead components. As detailed above, Pneumatiques broadly teaches the use of parallel metallic reinforcing elements, such as cords, cables, or wires (Page 2, Lines 35-45). Okamoto, on the other hand, is directed to a specific metal cord reinforcement for rubber articles, such as vehicle tires, that provides high adhesion with rubber, resistance to corrosion, resistance to fatigue, and high mechanical properties (Column 1, Lines 5-12 and 25-40). A fair reading of Okamoto does not suggest the exclusive use of said metal cord reinforcement in a specific tire component- one would have readily appreciated using said metal cord reinforcement in a wide variety of tire components, including flippers, since the above

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noted benefits are highly desirable in nearly all tire components (benefits are independent of the specific tire component- would be expected to be present in the flipper of Pneumatiques in view of Okamoto).

Applicant argues that Okamoto teaches away from using filaments having a diameter greater than or equal to 0.05 mm and less than or equal to 0.20 mm. The examiner respectfully disagrees. Okamoto specifically states that the metal filaments typically have a filament diameter between 0.1-0.5 mm, which overlaps more than one half of the claimed range between 0.05 mm and 0.20 mm (Column 5, Lines 34+). The disclosure of a preferred range within the above noted broad range does not teach away from using a filament having a diameter within the broad range.

As to Mizuma, applicant contends that the reference is silent as to tire beads and/or bead components. A fair reading of Mizuma, however, suggests the general manufacture of a specific steel cord that provides a high degree of fatigue resistance. While the Abstract of Mizuma mentions a belt and carcass, one would have recognized such a disclosure as being preferred embodiments and found it obvious to use the disclosed steel cord in a wide variety of tire components since high fatigue resistance is not exclusive to the belt and/or carcass.

Regarding *Io*, it is emphasized that the language "high performance" fails to structurally define the claimed tire over that of *Io*. The additional arguments with respect to *Io* in view of Okamoto have been addressed above.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1791
June 7, 2010